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IIT-Bhubaneswar develops low-cost advanced ventilator

Prof Mangipudi claimed that the device has an edge over other devices because of its easy maintenance and repair.



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By Express News Service

BHUBANESWAR: The faculty members and students of IIT-Bhubaneswar have developed a low cost semi-automated ventilator that works on active assist control mode, adjusting to changing demand of the patient. It pumps the required amount of air to the patient's airways by adapting to his or her breathing rate. However, the device is yet to be tested on humans.

The device - Patient Responsive Active Assist Control (PRAAN), can apparently sense when the patient is trying to inhale naturally while on ventilation and can quickly adapt to his breathing rate to push air into the lungs.

The institute researchers claimed that the advanced device which can reduce chances of the patients' lungs getting damaged due to faulty optimization of ventilators.

“In case, there is any error in putting (adjusting) the frequency...(sic) if the clinician wrongly sets the frequency of breathing to a higher value, then the patient will be overloaded. That is not his natural frequency. It can cause additional damage to the lung,” claimed Professor Kodanda Ram Mangipudi, from School of Minerals, Metallurgical and Materials Engineering.

“PRAAN can be operated in standard volume control mode by setting breaths-per-minute, inhale and exhale time ratios, and tidal volume. The LCD displays various control clinical parameters and features fault alarms,” he added.

Prof Mangipudi claimed that the device has an edge over other devices because of its easy maintenance and repair.

“It can be repaired by semi-skilled workers as the basic components include a motor and piston-like system,” he added. While the research team claims to have spent around Rs 8,000 for preparing the prototype, cost of production may increase upto Rs 10,000 during mass production sans any subsidy.